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March 22, 2011

Teachers' Retirement Board
California State Teachers' Retirement System

Re: **Defined Benefit Program Actuarial Valuation as of June 30, 2010**

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Defined Benefit Program of the State Teachers' Retirement Plan as of June 30, 2010. The major findings of the actuarial valuation are contained in the following report, which reflects the benefit provisions and contribution rates in effect as of the valuation date. This report reflects the benefit provisions and contribution rates in effect as of June 30, 2010,

We certify that the information included in this report is complete and accurate to the best of our knowledge and belief. Please refer to Section 3 of this report for our full actuarial certification statement.

Actuarial computations presented in this report are for purposes of assessing the funding of CalSTRS. The calculations in the enclosed report have been made on a basis consistent with our understanding of CalSTRS' funding. Determinations for other purposes may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

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(b) CalSTRS may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

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The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

We would like express our appreciation to the CalSTRS staff who gave substantial assistance in supplying the data on which this report is based.

Respectfully submitted,

Nick J. Collier, ASA, EA, MAAA
Principal and Consulting Actuary

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Principal and Consulting Actuary

NJC/MCO/nlo

California State Teachers' Retirement System
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Section 1
Summary of the Findings

The primary purpose of the actuarial valuation is to analyze the sufficiency of future contributions from members, employers, and the State to meet the current and future obligations of the Defined Benefit (DB) Program. By using the actuarial methods and assumptions adopted by the Teachers' Retirement Board, this actuarial valuation provides the best estimate of the long-term financing of the DB Program. The key findings of this actuarial valuation are:

Funding Sufficiency

As of June 30, 2010, the future revenue from contributions and appropriations for the DB Program is **not** expected to be sufficient to finance its obligations. This is consistent with our projections in all of the actuarial valuations since 2003.

The projected revenue shortfall is due primarily to investment return experience averaging 2.5% per year over the last decade that was significantly less than the long-term actuarial assumption of 7.75%. Based on the current DB Program assets, current revenues, and all future experience emerging as assumed, the Unfunded Actuarial Obligation (UAO) will not be amortized over any future period.

A level contribution rate of 33.512% beginning on the valuation date is projected to be needed to amortize the UAO over a 30-year period. This is equivalent to an **increase of 14.236% of Earned Salaries** for a period of 30 years from the valuation date. Details of this calculation are described in the "Other Assumptions and Methods" section near the end of the Executive Summary. In particular, the additional revenue needed of 14.236% accounts for the expected future recognition of $23.2 billion of assets losses that are currently being deferred under the actuarial smoothing method.

(Percent of Earned Salaries)	2010 Valuation	2009 Valuation
Calculated Contribution Rate for 30-Year Funding Period		
Normal Cost Rate	17.713%	17.314%
Amortization Rate	15.799	14.545
Total Level Rate over the Amortization Period	33.512%	31.859%
Current Contribution Rate	19.276%*	17.951%
Estimated Additional Revenue Needed	14.236%*	13.908%

* *For 2010, the current contribution rate includes future supplemental contributions under EC §22955(b) which are equivalent to 1.206% of earned salaries; the additional revenue of 14.236% needed is in addition to these supplemental State contributions.*

Funding Sufficiency (continued)

As shown in the previous chart, there was a small increase in the additional revenue needed, as compared to the last valuation. There were a number of factors that contributed to this change, although for the most part they offset each other, resulting in an increase of about 0.3% of earned salaries.

The new investment return assumption and the declining payroll were the two biggest factors causing increases in the additional revenue needed. Note that since the UAO is funded as a percentage of the earned salaries, a decline in payroll results in a higher percentage of the reduced payroll needed to make the same dollar contributions towards paying off the UAO.

The strong return (12.2%) for the fiscal year ending in 2010 and the triggering of supplemental state contributions (as discussed below) were the two biggest factors causing decreases in the additional revenue needed.

The following chart shows a numerical breakdown of each of the factors that caused the change in the additional revenue needed.

Sources of Change	Additional Revenue Needed
June 30, 2009 Actuarial Valuation	**13.9%**
Expected Year-to-Year Change (due to underfunding)	0.5%
Assumption Changes (Economic)	1.2%
Current Year Asset Gain	-1.0%
Salary / Payroll Variation	0.8%
State Supplemental Contributions triggered	-1.2%
All Other Sources	0.0%
Total Change	**0.3%**
June 30, 2010 Actuarial Valuation	**14.2%**

Note that the recognition of prior year asset losses under the actuarial smoothing method had a significant impact on the Funded Ratio, as discussed later; however, the prior year's additional revenue calculation already accounted for these losses. Therefore, the recognition of prior asset losses did not cause a change in the additional revenue needed.

Funding Sufficiency (continued)

Also note that our analysis focuses on the additional revenue needed as a percentage of the total payroll. When viewed in pure dollar terms, the additional revenue needed actually decreased slightly since the last valuation due to the significant decline in the total earned salaries. As CalSTRS is funded on a percentage of payroll basis, we will present the results for additional revenue needed on a percentage basis, as we have in the past.

Supplemental Contributions

Education Code §22955(b) describes a test for the funded status of the benefit structure in effect in 1990. As detailed in Section 7 of this report, there is an UAO as of June 30, 2010 related to the 1990 Benefit Structure. Therefore, additional supplemental contributions are called for under the current law with respect to the benefit structure in effect in 1990.

The State is required to commence quarterly payments It is our understanding the State will contribute based on the following schedule, effective July 1, 2011:

Supplemental Contributions Schedule Under 22955(b)	
Fiscal Year Beginning	**% of Earned Salaries**
2011	0.524%
2012	0.774%
2013	1.024%
2014	1.274%
2015 & Later	1.505%

Supplemental contributions commencing July 1, 2011 are equivalent to 1.206% of payroll paid over a 30-year period. This provides a small portion of the total revenue needed; however, additional funding (over and above the supplemental contributions) of 14.236% of payroll is still needed to amortize the UAO over a 30-year period.

Funding Progress

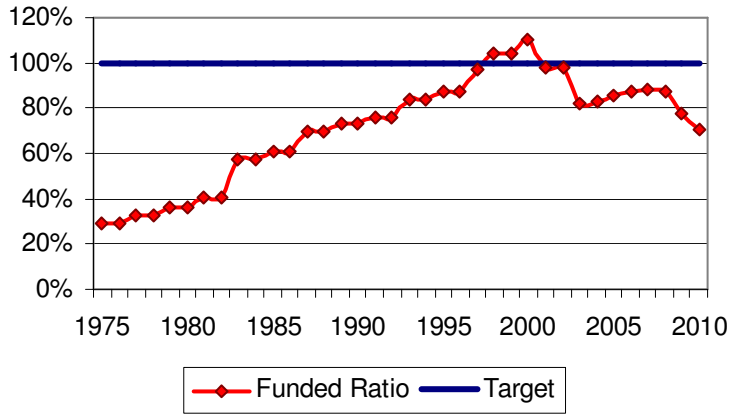
The Funded Status of a retirement plan is equal to the difference between its Actuarial Value of Assets and its Actuarial Obligation. The Funded Ratio is equal to the Actuarial Value of Assets divided by the Actuarial Obligation.

($Millions)	**2010 Valuation**	**2009 Valuation**
Actuarial Obligation	$ 196,315	$ 185,683
Actuarial Value of Assets	140,291	145,142
Unfunded Actuarial Obligation	$ 56,024	$ 40,541
Funded Ratio	71%	78%

Funding Progress (continued)

Overall, the DB Program is in a significantly worse funded status compared to one year ago as measured by the Funded Ratio. Although the 12.2% return for the prior fiscal year helped slightly, the recognition of prior assets losses under the actuarial smoothing method had a much more significant, and negative, effect. The following graph shows a historical perspective of CalSTRS' funding. It shows the significant funding progress CalSTRS achieved from 1975 to 2000 and also the negative impact of the economic environment over the last decade.

Historical Funded Ratio



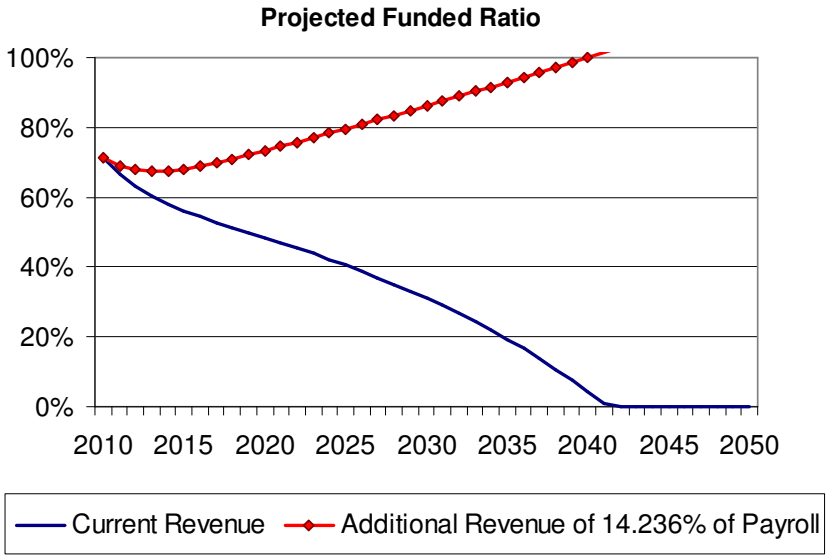
The following chart shows the factors that affected the DB Program's Funded Ratio since the last valuation. The recognition of prior asset losses was by far the most significant factor.

Sources of Change	Funded Ratio
June 30, 2009 Actuarial Valuation	**78%**
Expected Year-to-Year Change	-1%
Assumption Changes (Economic)	-2%
Recognized Asset (Gain)/Loss	
From Prior Years	-7%
From Current Year	1%
Salary Variation	2%
All Other Sources	0%
Total Change	**-7%**
June 30, 2010 Actuarial Valuation	**71%**

Looking Ahead

As previously noted, CalSTRS needs a significant increase in revenue to make progress towards its funding target. Still, the DB Program assets are sufficient to make benefit payments for a number of years. However, the projected time horizon before the assets are depleted (and benefits would have to be paid on a "pay-as-you-go" basis) is expected to continue to decrease in the future – if CalSTRS is not able to secure additional funding or future investment returns do not significantly exceed the 7.75% assumption.

The following projection shows the projected Funded Ratio if the DB Program earns 7.75% in each future year and all other assumptions are met. As shown in the graph, the DB Program is projected to have its assets depleted in about 30 years (the year the Funded Ratio goes to 0%), if additional funding is not secured.



Impact of Delay

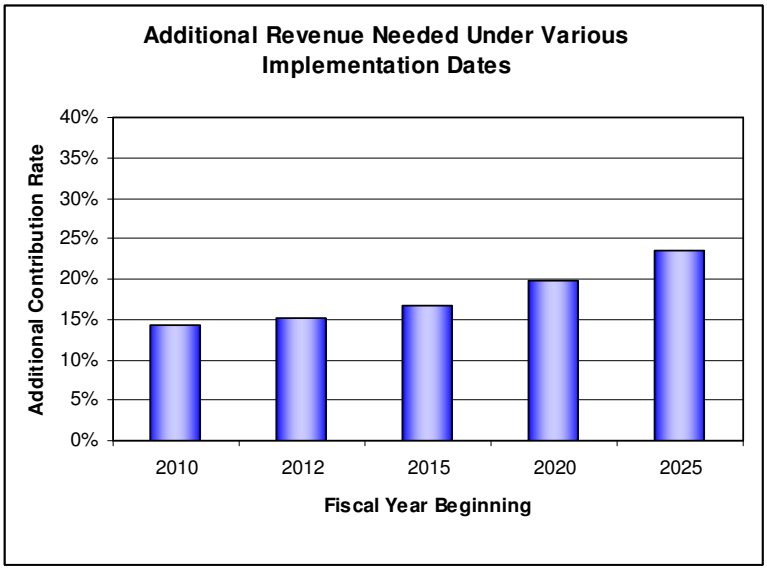
The additional revenue needed is a hypothetical calculation based on the June 30, 2010 valuation date. In particular, it assumes additional contributions will commence on that date. The reality is that increased contributions will not begin until some later date and may only increase gradually. The longer it takes for the additional contributions to begin, the greater they will need to be. The following chart shows the impact on the additional revenue needed based on the actual implementation date. Specifically, the longer it takes to implement a funding solution, the more expensive it is likely to be.

Impact of Delay (continued)

These calculations are based on the same provisions as the main additional revenue calculation except for the implementation date. In particular, it is assumed that:

- All experience is consistent with the valuation assumptions.
- Current deferred asset losses are reflected as they are expected to be recognized in the asset smoothing method.
- The entire additional contribution goes to funding the UAO.

All figures shown are calculated to fully pay off the UAO 30 years from the implementation date of the increased contribution.

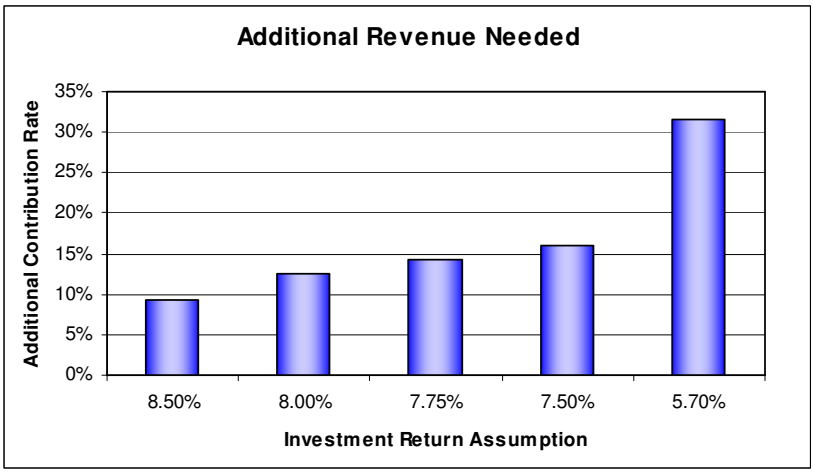


Investment Return Assumption

Future investment returns will have a material impact on the contributions ultimately needed to fund the UAO. To illustrate the sensitivity to future investment returns, we have performed an analysis of the impact of various investment return assumptions. We have shown the additional revenue needed under the valuation investment return assumption of 7.75%, as well as 8.00% (the assumption used in the prior valuation) and 7.50% (an alternative assumption that we have discussed with the Board).

We have also shown 8.5% and 5.7% investment return assumptions. Based on our analysis, these are the expected returns for the 25th and 75th percentiles respectively for a 30-year period. In our analysis, we used the 2011 capital market assumptions of Pension Consulting Alliance. These percentile returns indicate the likelihood that actual future returns will deviate significantly from the current 7.75% assumption. Specifically, based on this analysis, there is a 25% chance the return will be greater than 8.5%, but also a 25% chance the return will be less than 5.7% over a 30-year period.

Investment Return Assumption (continued)



Other Assumptions and Methods

Appendix B of this report provides a detailed description of the assumptions and methods used in the valuation.

One area that should be highlighted is how the additional revenue is determined.

- In calculating the needed additional contributions, we have used the 30-year amortization period, as it is the period CalSTRS uses to assess funding sufficiency. The calculation should be viewed as an estimate, as there are a number of factors, including those discussed below, which will impact this estimate. Milliman has developed a model so that we can work with CalSTRS staff to address any specific funding proposals.
- The 14.236% increase in contribution rate discussed in this report is based on a specific point in time (June 30, 2010) and numerous assumptions about the future. Even if this increase were implemented, actual investment returns and other assumptions will vary from what is assumed. If experience is worse than assumed, particularly if investment returns are less than expected, it is likely additional contributions would be needed in the future to maintain the 30-year amortization. Setting a higher contribution rate (i.e., an increase greater than 14.236% of payroll) would provide some buffer for possible future adverse experience.
- In the projection of the Actuarial Value of Assets (AVA), current asset losses are reflected as they would be expected to be recognized in the future assuming a 7.75% investment return on the Fair Market Value of Assets. Therefore, the amortization of the UAO reflects the full extent of the asset losses that have occurred over the last decade. If the expected future impact of the deferred assets losses was not accounted for, the additional revenue needed would be 9.614% of earned salaries. This compares with 6.943% last year reported on this basis.

Other Assumptions and Methods (continued)

- The current equivalent contribution rates takes into account future State supplemental contributions under §22955(b). In other words, the additional revenue needed is in addition to the current contribution rate which includes the supplemental contributions.
- The amortization calculation assumes that the full 14.236% of total payroll will be used to fund the UAO. A 1% increase in the contribution by the State or members is actually worth less than 1% of pay, because the State contributes based on payroll that is two years old and a portion of any increase in member's contributions is expected to be refunded. Therefore, the additional revenue needed may be higher as a percent of payroll depending on the source.

Changes Since the 2009 Valuation

There were no legislative changes since the prior report that had an impact on this valuation.

The investment return (7.75%) and inflation (3.00%) assumptions were lowered at the December 2010 Board meeting. All other actuarial assumptions and actuarial methods used in this valuation were based on the 2007 Actuarial Experience Analysis adopted by the Board on April 3, 2008.

As previously discussed, supplemental State contributions are now required under EC §22955(b) based on the results of the 2010 Actuarial Valuation. This is reflected in the projections throughout this valuation.

Further Information

Details of our findings are included in later sections of this report. The appendices include supporting documentation on the benefit and eligibility provisions used to project future benefits, the actuarial methods and assumptions used to value the projected benefits, and the underlying census data provided by CalSTRS for this valuation.

Summary of Key Valuation Results

	2010 Valuation	2009 Valuation	Percent Change
1. Total Membership			
A. Active Members	441,544	459,009	(3.8) %
B. Inactive Members	166,976	156,207	6.9 %
C. Retired Members and Beneficiaries	243,796	232,617	4.8 %
D. Total Membership	852,316	847,833	0.5 %
2. Earned Salaries as of Valuation Date (All Members)			
A. Annual Total *($Millions)*	26,275	27,327	(3.8) %
B. Annual Average per Active Member	59,507	59,536	(0.0) %
3. Average Annual Allowance Payable			
A. Service Retirement	39,624	37,968	4.4 %
4. Actuarial Obligation *($Millions)*			
A. Active Members	90,978	91,006	(0.0) %
B. Inactive Members	5,601	5,105	9.7 %
C. Retired Members and Beneficiaries	99,135	88,927	11.5 %
D. Existing MPPP Unfunded Obligation	601	645	(6.8) %
E. Total	196,315	185,683	5.7 %
5. Value of System Assets *($Millions)*			
A. Fair Market Value	123,242	113,192	8.9 %
B. Deferred Investment (Gains) or Losses	23,162	37,253	
C. Actuarial Value	146,404	150,445	(2.7) %
D. Ratio of Actuarial Value to Fair Value	119%	133%	
E. Less SBMA Reserve	(6,113)	(5,303)	15.3 %
F. Net Actuarial Value	140,291	145,142	(3.3) %
6. Funded Status			
A. Unfunded Actuarial Obligation *($Millions)*	56,024	40,541	38.2 %
B. Funded Ratio *(5F ÷ 4E)*	71%	78%	
7. Contribution Rates *(percent of salaries)*			
A. 30-Year Projected Revenue	19.276%	17.951%	7.4 %
B. Normal Cost Rate	17.713%	17.314%	2.3 %
C. Available for Amortization of UAO *(7A – 7B)*	1.563%	0.637%	145.4 %
D. Period to Amortize	Does not amortize	Does not amortize	
E. Projected 30-Year Level Funding Rate	33.512%	31.859%	5.2 %
F. Projected Shortfall (Surplus) *(7E – 7A)*	14.236% *	13.908%	2.4 %

** This projected shortfall reflects the fact that State supplemental contributions are now required under 22955(b). It is our understanding that these supplemental contributions will begin in Fiscal Year 2011. If future State supplemental contributions are not reflected, the projected shortfall would be 15.442%.*

Section 2
Scope of the Report

This report presents the actuarial valuation of the Defined Benefit Program of the State Teachers' Retirement Plan as of June 30, 2010.

In reading our Actuarial Certification in Section 3, please pay particular attention to the guidelines employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions upon which our findings depend. Those comments are the basis for our certification that this report is complete and accurate to the best of our knowledge and belief.

A summary of the key results of this valuation is presented in the previous section. The remainder of this report is arranged as follows.

Section 4 describes the benefit obligations of CalSTRS including the development of the Normal Cost and the Actuarial Obligation.

Section 5 outlines the Fair Market Value of Assets of the DB Program and the determination of the Actuarial Value of Assets as of June 30, 2010. All of the assets of the Program are available to finance future DB Program benefits and expenses, except those allocated for the Supplemental Benefit Maintenance Account (SBMA) and for future payments from the Medical Premium Payment Program (MPPP).

Section 6 shows the relationship between the Actuarial Value of Assets and the Actuarial Obligation, also called the Funded Ratio.

Section 7 discusses the calculations used to determine if a supplemental contribution is required from the State in accordance with EC §22955(b). The key elements of this calculation pertain to an evaluation of the assets and obligations associated with the benefits in effect in 1990.

The funding sufficiency of the current projected revenue stream for the DB Program is tested in Section 8.

This report includes several appendices:

Appendix A — A summary of the current benefit structure, as determined by the provisions of governing law on June 30, 2010.

Appendix B — A summary of the actuarial methods and assumptions used to estimate actuarial obligations and the funding sufficiency.

In our opinion, the assumptions used in the valuation are reasonably related to the past experience of the DB Program, are internally consistent, and represent a reasonable estimate of future conditions affecting the DB Program. Nevertheless, the emerging costs of the DB Program will vary from those presented in this report to the extent that actual experience differs from that projected by the actuarial assumptions.

Appendix C — Schedules of valuation data classified by various categories of plan members. We relied upon the membership and beneficiary data supplied by CalSTRS. We compared the data for this and the prior valuation and tested for reasonableness. Based on these tests, we believe the data to be sufficient for the purposes of our calculations.

Appendix D — A glossary of actuarial terms used in this report.

Section 3
Actuarial Certification

The major findings of the 2010 Actuarial Valuation are contained in this report. This report reflects the benefit provisions and contribution rates in effect as of the valuation date. To the best of our knowledge and belief, this report is complete and accurate and contains sufficient information to fully and fairly disclose the funded condition of the Defined Benefit Program as of June 30, 2010.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by CalSTRS' staff. This information includes, but is not limited to, statutory provisions, employee data, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for CalSTRS have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of CalSTRS and reasonable expectations); and which, in combination, offer a reasonable estimate of anticipated experience affecting CalSTRS. Further, in our opinion, each actuarial assumption used is reasonably related to the experience of CalSTRS and to reasonable expectations which, in combination, represent a reasonable estimate of anticipated experience. The Teachers' Retirement Board has sole authority to determine the actuarial assumptions and methods used for the valuation of the DB Program. The Board adopted the actuarial methods and assumptions used in the 2010 valuation.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles. We are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Nick J. Collier, ASA, EA, MAAA
Principal and Consulting Actuary

Mark C. Olleman, FSA, EA, MAAA
Principal and Consulting Actuary

Section 4
Actuarial Obligation

In this section, the discussion will focus on the commitments of CalSTRS for retirement benefits, which are referred to as its actuarial obligation.

In an active system with new entrants, the actuarial obligation, or liabilities, will generally exceed the actuarial value of assets. This deficiency has to be provided by future contributions, net actuarial gains due to experience more favorable than assumed or, to some extent, net growth in the number of active members. An actuarial valuation method sets out a schedule of future contributions and determines if they will amortize any deficiency in an orderly fashion.

Normal Cost

The **Normal Cost** represents the cost assigned to an average member for a given year such that it would meet the continuing costs of a particular benefit if contributed each year starting with the date of membership. The Entry Age Actuarial Cost Method is designed to produce a Normal Cost that remains a level percentage of Earned Salaries, so it is best expressed as a rate.

The following chart shows the Normal Cost Rate has increased from 17.314% to 17.713% since the last valuation. **Table 1** provides more details on the calculation of the Normal Cost and Normal Cost Rates.

	($Millions)		
	Annualized Earned Salaries	**Normal Cost**	**Normal Cost Rate**
June 30, 2009	$ 27,550	$ 4,770	17.314%
June 30, 2010	$ 26,450	$ 4,685	17.713%

In general, the Normal Cost Rate is expected to remain fairly stable as a percentage of Earned Salaries as long as the benefit provisions are not amended, the assumptions are not changed, membership experience emerges as assumed, and the demographic characteristics of the membership remain reasonably consistent.

The change in the investment return and wage inflation assumptions caused an increase in the Normal Cost Rate between the 2009 and 2010 actuarial valuations.

Actuarial Obligation

The next step in the actuarial valuation process is to project all future DB Program benefit payments for current members and retirees. The level of benefits currently being paid is known, but assumptions are needed to estimate how long they will be paid, and the amount and timing of the payment of future benefits for active and inactive members who are not currently receiving payments. The summation of the discounted values of all of the projected benefit payments for all current members at the assumed rate of return is called the **Actuarial Present Value of Projected Benefits**.

Details are shown in **Table 2** and summarized below.

($Millions)	**2010 Valuation**	**2009 Valuation**
Benefits Being Paid	$ 99,135	$ 88,927
Inactive Deferred Benefits	5,601	5,105
Active Members' Benefits	146,355	147,714
Existing MPPP Unfunded Obligation	601	645
Present Value of Projected Benefits	$ 251,692	$ 242,391
Present Value of Future Normal Costs	55,377	56,708
Actuarial Obligation	$ 196,315	$ 185,683

The **Actuarial Present Value of Future Normal Costs** is the value of all remaining Normal Costs expected to be received over the future working lifetime of current active members. The **Actuarial Obligation** is the difference between the Actuarial Present Value of Projected Benefits and the Actuarial Present Value of Future Normal Costs. The Actuarial Obligation is equal to the assets that would exist if the current Normal Cost Rate had been paid for all members since entry into the Program, and if all experience had emerged as assumed.

Table 1
Normal Cost

($Millions)	2010	2009
Estimated Annual Earned Salaries [1]	$ 26,450	$ 27,550
Present Value of Future Normal Costs for Current Active Members	$ 55,377	$ 56,708
Present Value of Future Earned Salaries for Current Active Members	$312,636	$327,527
Normal Cost		
Retirement	$ 4,278	$ 4,353
Disability	202	206
Death	56	57
Withdrawal	149	154
Total Normal Cost	$ 4,685	$ 4,770
Normal Cost Rate Percent of Earned Salaries		
Retirement	16.174%	15.800%
Disability	0.764	0.748
Death	0.212	0.207
Withdrawal	0.563	0.559
Total Normal Cost	**17.713%**	**17.314%**

(1) Annual rate of Earned Salaries for active members on the valuation date, excluding active members over age 70 on the valuation date who are assumed to retire immediately and, therefore, do not generate a Normal Cost. Earned salaries for new entrants who have only worked a partial year have been annualized.

Table 2
Actuarial Obligation

($Millions)	2010	2009
Present Value of Projected Benefits to All Current Members		
Benefits Currently Being Paid		
Service Retirement	$ 92,126	$ 82,422
Disability	2,469	2,297
Survivors	4,540	4,208
Total	99,135	88,927
Benefits to Inactive Members	5,601	5,105
Benefits to Active Members		
Retirement	140,902	142,217
Disability	3,622	3,632
Death	1,262	1,257
Withdrawal	569	608
Total	146,355	147,714
Existing MPPP Unfunded Obligation	601	645
Total Present Value of Projected Benefits	$251,692	$242,391
Present Value of Future Normal Costs	55,377	56,708
Actuarial Obligation	**$196,315**	**$185,683**

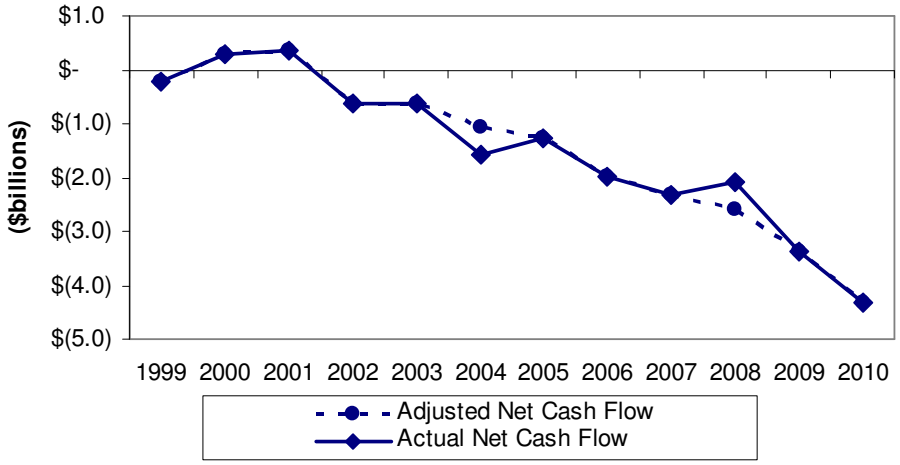
Section 5
Valuation Assets

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is June 30, 2010. On that date, the assets available for the payment of retirement benefits are appraised.

The next step in the valuation process is to calculate the **Actuarial Value of Assets** that will be used to determine the funding status of the Program. As shown in **Table 3**, the Fair Market Value of assets was reported as $123,242 million as of June 30, 2010, up from $113,192 million as of June 30, 2009. **Table 4** shows the asset changes for the period.

As shown in Table 4, the net cash flow (contributions less benefits and expenses) continues to be increasingly negative. This is a typical pattern for a mature retirement system where it is expected that contributions will be less than benefits and that the system will begin drawing on the fund that has been built up over prior years. This trend will continue absent a significant increase in contributions.

As illustrated in the following graph, 2004 and 2008 were inconsistent with the trend over the last few years, due to a $500 million reduction in the State's contribution to the SBMA for the 2003-04 fiscal year, repaid in the 2007-08 fiscal year. The dotted line adjusts the cash flow trend for the deferral of this contribution.



Because the underlying calculations in the actuarial valuation are long-term in nature, it may be advantageous to use an asset smoothing method to lessen the impact of short-term fluctuations in the value of assets. The asset smoothing method projects an expected Actuarial Value of Assets from the Actuarial Value of Assets as of the previous year. The projection uses the assumed rate of investment return, then recognizes only one-third of the difference between the expected value and the Fair Market Value to arrive at the Actuarial Value of Assets. The calculation of the Actuarial Value of Assets is shown in **Table 5** and the result is shown below.

($Millions)	**June, 2010**	**June, 2009**
Fair Market Value	$ 123,242	$ 113,192
Actuarial Value of Assets	$ 146,404	$ 150,445
Deferred Investment Gains or (Losses)	$ (23,162)	$ (37,253)
Ratio of AVA to FMV	119%	133%

Due to the asset smoothing method, there are investment losses of $23,162 million that have not yet been recognized (the difference between the Actuarial and Fair Market Value of Assets). Absent investment returns in future years significantly greater than the assumed rate to offset the deferred investment losses, the current losses will gradually be reflected in the Actuarial Value of Assets.

If the future returns on the Fair Market Value of Assets are 7.75% each year, then as the current deferred losses flow through the smoothing method and are recognized, future valuations will show an actuarial loss. The result will be a slow decrease in the DB Program's funded status, ultimately increasing the Unfunded Actuarial Obligation by the $23,162 million of currently deferred investment losses.

Table 6 shows a history of the Actuarial Value of Assets compared to the Fair Market Value of Assets.

Table 3
Statement of Program Assets

($Millions)	June, 2010	June, 2009
Invested Assets		
Short-term	$ 2,294	$ 2,888
Debt Securities	27,739	24,611
Equity	61,477	58,783
Alternative	19,129	15,171
Real Estate	13,035	12,395
Total Investments	$ 123,674	$ 113,848
Cash and Cash Equivalents	458	425
Receivables	2,045	3,653
Liabilities	(2,935)	(4,734)
Fair Market Value of Net Assets	**$ 123,242**	**$ 113,192**

Table 4
Statement of Changes in Program Assets

($Millions)	June, 2010	June, 2009
Contributions		
Members	$ 1,673	$ 1,792
Employers	2,131	2,332
State of California	1,222	1,140
Total Contributions	5,026	5,264
Benefits and Expenses		
Retirement, Death, and Survivors	(8,856)	(8,095)
Refunds of Member Contributions	(85)	(75)
Purchasing Power Benefits	(273)	(348)
Administrative Expenses	(134)	(109)
Total Benefits and Expenses	(9,348)	(8,627)
Net Cash Flow	**$ (4,322)**	**$ (3,363)**
Investment Income		
Realized Income	$ 3,434	$ 3,568
Net Appreciation	10,538	(41,677)
Net Securities Lending Income	563	(931)
Investment Expenses	(171)	(160)
Other (Expense) Income	8	(8)
Net Investment Return	14,372	(39,208)
Net Increase (Decrease)	**$ 10,050**	**$ (42,571)**
Fair Market Value of Net Assets		
Beginning of Year	113,192	155,763
End of Year	**$ 123,242**	**$ 113,192**
Estimated Net Rate of Return (1)	12.9%	(25.4)%

(1) Estimated return on a Fair Market Value basis, net of all investment expenses and assuming uniform cash flow throughout the year. This number will likely differ from the return reported by CalSTRS as it is a dollar-weighted value, whereas CalSTRS reports time-weighted values.

Table 5
Actuarial Value of Assets

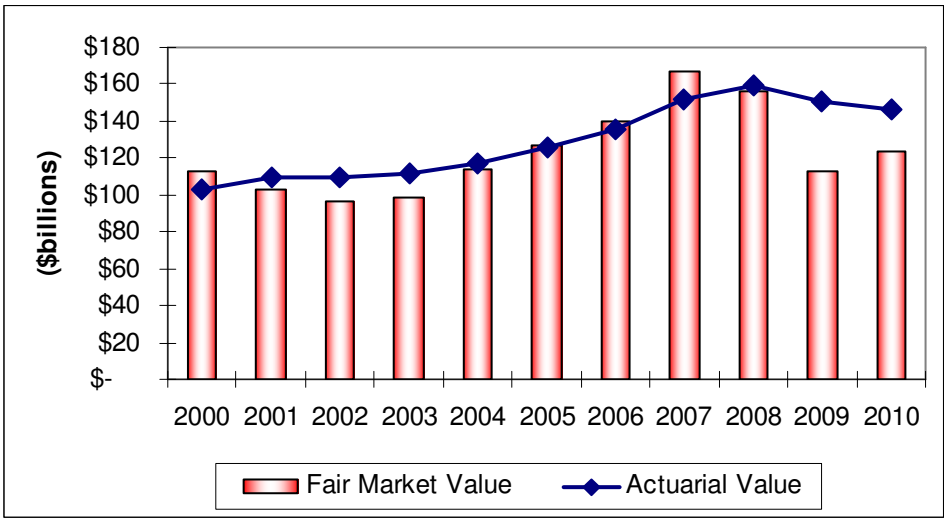
($Millions)	June, 2010	June, 2009
Actuarial Value at Beginning of Year	$ 150,445	$ 159,785
Contributions	5,026	5,264
Benefits and Expenses	(9,348)	(8,627)
Expected Return at 8%	11,862	12,649
Expected Actuarial Value End of Year	$ 157,985	$ 169,071
Fair Market Value	123,242	113,192
Difference between Fair Market Value and Expected Actuarial Value	$ (34,743)	$ (55,879)
Recognition Factor	One-third	One-third
Recognized Gain or Loss	$ (11,581)	$ (18,626)
Actuarial Value at End of Year	**$ 146,404**	**$ 150,445**
Deferred Investment Gains or (Losses)	**$ (23,162)**	**$ (37,253)**
Ratio of Actuarial Value of Assets to Fair Market Value of Assets	*119%*	*133%*
Estimated Net Rate of Return [(1)]	0.2%	(3.8)%

(1) Estimated return on an Actuarial Value basis, net of all investment expenses and assuming uniform cash flow throughout the year.

Table 6
History of Actuarial Value of Assets

($Millions) June 30	Fair Market Value	*Estimated Return* (1)	Actuarial Value	Ratio of Actuarial to Market
2000	$112,771	*12.7%*	$102,790	91%
2001	102,915	*(9.1)*	108,571	105
2002	96,028	*(6.1)*	109,755	114
2003	99,031	*3.8*	111,604	113
2004	113,815	*16.6*	117,206	103
2005	126,447	*12.3*	125,665	99
2006	140,192	*12.5*	135,832	97
2007	166,903	*20.9*	151,827	91
2008	155,763	*(5.5)*	159,785	103
2009	113,192	*(25.4)*	150,445	133
2010	123,242	*12.9*	146,404	119

(1) Estimated return on a Fair Market Value basis, net of all investment expenses and assuming uniform cash flow throughout the year. This number will likely differ from the return reported by CalSTRS as it is a dollar-weighted value, whereas CalSTRS reports time-weighted values.



Section 6
Funded Status

The **Unfunded Actuarial Obligation** is the excess of the Actuarial Obligation over the Actuarial Value of Assets, which represents a liability that must be funded over time. Contributions in excess of the Normal Cost are used to amortize the Unfunded Actuarial Obligation. An **Actuarial Surplus** exists if the Actuarial Value of Assets exceeds the Actuarial Obligation.

The **Funded Ratio** is equal to the Actuarial Value of Assets divided by the Actuarial Obligation. A Funded Ratio of 100% means the Value of Assets equals the Actuarial Obligation, and the DB Program could be financed by contributions equal to the Normal Cost, if all future experience emerges as assumed. The Funded Ratio is shown below and in **Table 7**.

($Millions)	**2010 Valuation**	**2009 Valuation**
Actuarial Obligation	$ 196,315	$ 185,683
Actuarial Value of Assets		
From Table 5	146,404	150,445
Less SBMA Reserve	(6,113)	(5,303)
Net for Funding	140,291	145,142
Unfunded Actuarial Obligation	$ 56,024	$ 40,541
Funded Ratio (on A.V.A.)	**71%**	**78%**
Alternate Funded Ratio (based on Fair Market Value)	*60%*	*58%*

Overall, the DB Program is in worse financial condition than it was one year ago as measured by the Funded Ratio. However, due to the investment gain for the 2009-10 year, the Alternate Funded Ratio using the Fair Market Value of assets has increased since the last valuation.

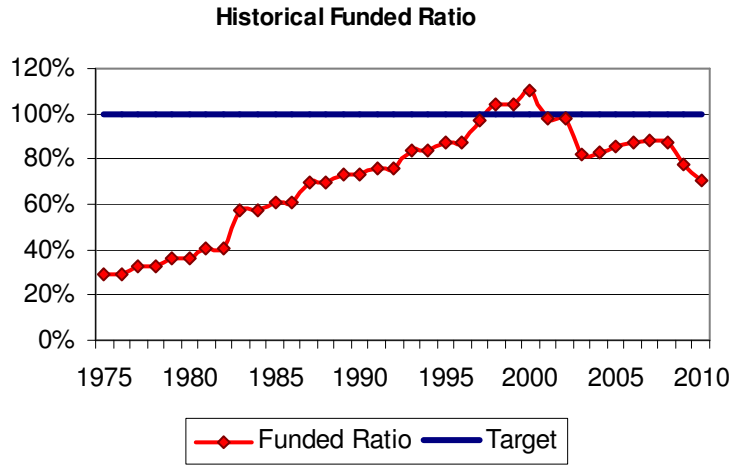
Future benefits provided through the Supplemental Benefits Maintenance Account (SBMA) are not part of the projected benefits included in this valuation. Therefore, the SBMA Reserve is subtracted from the DB Program assets to arrive at the value available to support the benefits included in this valuation.

In addition, the Teachers' Retirement Board has established a policy of allocating funds for future costs associated with the Teachers' Health Benefits Fund (THBF). This policy was revised in April of 2009 to make a one-time credit to the THBF and "true up" the future MPPP obligations (payable from the THBF) in the funding of the DB Program. As of June 30, 2010, only a relatively small amount of $1 million resides in the THBF, while the remaining unfunded amount of $601 million is added to the DB Program obligation.

The following table shows a history of the Funded Status of the DB Program.

($Millions) Year	Actuarial Obligation	Actuarial Value of Assets	Unfunded Actuarial Obligation	Funded Ratio
1975	**$ 12,834**	**$ 3,775**	**$ 9,059**	**29%**
1977	15,203	5,019	10,184	33%
1979	17,971	6,488	11,483	36%
1981	22,545	9,345	13,200	41%
1983	26,553	15,023	11,530	57%
1985	**28,401**	**17,457**	**10,944**	**61%**
1987	34,637	24,401	10,236	70%
1989	40,266	29,327	10,939	73%
1991	47,100	36,001	11,099	76%
1993	53,581	45,212	8,369	84%
1995	**63,391**	**55,207**	**8,184**	**87%**
1997	69,852	67,980	1,872	97%
1998	74,234	77,290	(3,056)	104%
1999	86,349	90,001	(3,652)	104%
2000	93,124	102,225	(9,101)	110%
2001	109,881	107,654	2,227	98%
2003	131,777	108,667	23,110	82%
2004	138,254	114,094	24,160	83%
2005	**142,193**	**121,882**	**20,311**	**86%**
2006	150,872	131,237	19,635	87%
2007	167,129	146,419	20,710	88%
2008	177,734	155,215	22,519	87%
2009	185,683	145,142	40,541	78%
2010	196,315	140,291	56,024	71%

The historical Funded Ratios are plotted in the following graph. In years in which a valuation was not performed, the Funded Ratio from the previous year is used.



Actuarial Gains and Losses

Comparing the Unfunded Actuarial Obligation as of two valuation dates does not provide enough information to determine if there were actuarial gains or losses. The correct comparison is between the Unfunded Actuarial Obligation on the valuation date and the Expected Unfunded Actuarial Obligation projected from the prior valuation date using the actuarial assumptions in effect since the previous valuation.

The actuarial gains and losses since the last report are summarized in the following table and shown in **Table 8**.

($Millions)	**Expected Results**	**Actual Results**	**(Gain) or Loss**
Actuarial Obligation	$196,032	$196,315	$ 283
Act. Value of Assets	152,418	140,291	12,127
Unfunded Act. Oblig.	$ 43,614	$ 56,024	$ 12,410
Actuarial (Gains) or Losses by Source			
Change in economic assumptions			$ 4,384
Salaries increased less than assumed			(4,247)
All other non-investment sources			146
(Gain) or Loss on the Actuarial Obligation			283
Investment Return on Actuarial Value of Assets			10,931
Contributions (in excess of) or less than assumed			386
Change in the SBMA Reserve			810
(Gain) or Loss on the Actuarial Value of Assets			12,127
Total Actuarial (Gain) or Loss			$ 12,410

Actuarial Gains and Losses (continued)

($Millions)

Actuarial (Gains) or Losses on the Actuarial Obligation	(Gain) or Loss	Percent of Act. Oblig.
Change in economic assumptions	$ 4,384	2.2%
Salaries increased less than assumed	(4,247)	(2.2)
All other non-investment sources	146	0.1
(Gain) or Loss on the Actuarial Obligation	$ 283	0.1%

Actuarial (Gains) or Losses on the Actuarial Value of Assets	(Gain) or Loss	Percent of AVA
Return on Actuarial Value of Assets	$ 10,931	7.7%
Contributions less than assumed	386	0.3
Change in the SBMA Reserve	810	0.6
(Gain) or Loss on the Actuarial Value of Assets	$ 12,127	8.6%

These net gains and losses are within a reasonable range for variances in a single year given the significant market decline that is reflected in the Actuarial Value of Assets.

Based on the 2009 Actuarial Valuation, the Unfunded Actuarial Obligation was expected to increase to $43,614 million. The actual Unfunded Actuarial Obligation of $56,024 million represents a net actuarial loss of $12,410 million.

- The change in the actuarial investment return assumption (from 8.0% to 7.75%) and the corresponding change in the inflation assumption (from 3.25% to 3.0%) caused the Actuarial Obligation to increase by $4,384 million.
- Salaries increased less than the current actuarial assumptions, causing the Actuarial Obligation to decrease by $4,247 million more than expected. As history has shown, salary increases less than those assumed are often offset in future years by actual salary increases greater than those assumed. Given the recessionary economic environment, smaller-than-expected salary increases have been common among public agencies in recent years. We expect to continue to see salary increase fluctuations from year to year.
- All other non-investment experience represents only a relatively small portion of the expected Actuarial Obligation. These relatively minor net gains and losses indicate that the census is consistent from the prior period, and the actual experience tracked closely with the actuarial assumptions.

Actuarial Gains and Losses (continued)

- On the asset side, there are a number of sources of the actuarial gain or loss. First, we identified an investment return on the Actuarial Value of Assets greater than the 8% assumption that was used in the prior valuation. The return on Fair Market Value was estimated at 12.9%, while the return on the Actuarial Value of Assets was estimated at 0.2% due to the recognition of only a portion of the currently deferred investment losses.
- We do not predict future changes in the SBMA Reserve allocation in the DB Program valuation. The amount allocated to the SBMA Reserve increased by $810 million over the year. Any increase in this value results in an actuarial loss in the subsequent DB Program valuation.

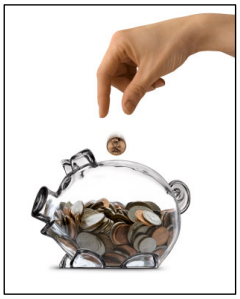
Table 7
Funded Status

($Millions)	2010	2009
Actuarial Obligation *(Table 2)*	$196,315	$185,683
Actuarial Value of Assets		
Calculated *(Table 5)*	146,404	150,445
Less SBMA Reserve	(6,113)	(5,303)
Program Assets	140,291	145,142
Unfunded Actuarial Obligation	**$ 56,024**	**$ 40,541**
Funded Ratio	**71%**	**78%**

Table 8
Actuarial Gains and Losses

($Millions)	Expected	Actual	(Gain) / Loss
Actuarial Obligation			
Actuarial Obligation June 30, 2009	$185,683		
Normal Cost for 2009-10	4,605		
Benefits Paid (Excludes Purchasing Power)	(8,941)		
Expected Interest at 8%	14,685		
Actuarial Obligation June 30, 2010	**$196,032**	**$196,315**	**$ 283**
By Source:			
Change in economic assumptions			*4,384*
Rehired Members			*19*
Retiree Mortality			*(92)*
Active Member Mortality			*(10)*
Service Retirements			*12*
Terminations			*105*
Disablement			*75*
Salary increases less than assumed			*(4,247)*
All Other Non-investment Sources			*37*
Total (Gain) Loss on the Actuarial Obligation			*$ 283*
Actuarial Value of Assets			
Actuarial Value of Assets June 30, 2009	$145,142		
Expected Contributions for 2009-10	4,769		
Benefits Paid (Excludes Purchasing Power)	(8,941)		
Expected Interest at 8% on A.V.A.	11,448		
Actuarial Value of Assets June 30, 2010	**$152,418**	**$140,291**	**$ 12,127**
By Source: Investment Return on Actuarial Value of Assets (including the recognition of prior deferred investment gains and losses)			*$ 10,931*
Contributions (in excess of) or less than assumed (including service purchases)			*386*
Change in SBMA Reserve			*810*
Total (Gain) Loss on the Actuarial Value of Assets			*$ 12,127*
Unfunded Actuarial Obligation	**$ 43,614**	**$ 56,024**	**$ 12,410**

Section 7
Supplemental Contributions



Under State law EC §22955(b), additional funds are required to be contributed by the State if at least one of the following two separate conditions is met:

1. Additional funding is required if the sum of the 8% contribution from the members and the 8% contribution from the employers is not sufficient to pay the Normal Cost of the benefits in effect as of July 1, 1990.
2. Additional funding is required if the Actuarial Value of Assets associated with the benefit provisions in effect as of July 1, 1990 is less than the Actuarial Obligation for those benefits.

Normal Cost Deficit: Since the Normal Cost Rate for the 1990 Benefit Structure is less than the 16% rate cited in the statute, there is no Normal Cost Deficit.

	2010 Valuation	2009 Valuation
Normal Cost Deficit – 1990 Benefit Structure		
Normal Cost Rate	15.002%	14.653%
Revenue for 1990 Benefits	16.000	16.000
Normal Cost Deficit	0.000%	0.000%

1990 Unfunded Actuarial Obligation: The Actuarial Obligation for the DB Program is recalculated using the benefit provisions in place during 1990. CalSTRS provides us with separate census data for this determination. The process has limitations since we do not know, for example, if members who retired would have done so if the post-1990 benefit enhancements had not been enacted. However, we believe we are using a reasonable process to estimate what the Actuarial Obligation would be if only the 1990 benefits were currently in place.

There were no benefit improvements enacted between 1990 and 1998 that had a material cost. All benefit enhancements enacted with effective dates from July 1, 1990 to December 31, 1998 have been presumed to be cost-neutral. Due to the enhanced retirement benefits enacted since 1990, we are using a separate set of retirement probabilities to evaluate the 1990 Benefit Structure.

The Actuarial Obligation related to the 1990 Benefit Structure is $159.5 billion. This compares to the Actuarial Obligation for the DB Program of $196.3 billion.

($Millions)	2010 Valuation	2009 Valuation
Actuarial Obligation – 1990 Benefit Structure		
Value of Projected Benefits	$206,674	$198,868
Value of Future Normal Costs	47,217	48,259
Actuarial Obligation	$159,457	$150,609

The Actuarial Value of Assets needs to be adjusted to reflect the contributions started on October 1, 1998, and an estimate of the additional benefits paid out due to the post-1990 benefit increases up to June 30, 2010. This task also has some limitations since we do not have precise data regarding the portion of, or the timing of, benefit payments that would be attributable to only the 1990 benefits.

The most significant adjustments to the assets are:

- Eliminate contributions in excess of 16.00%,
- Add back the member contributions that were directed to the DBS Program,
- Add back the benefit enhancements that have been paid, and
- Adjust for interest.

See **Table 9** for the details of the asset adjustment.

($Millions)	June, 2010	June, 2009
Asset Adjustment – 1990 Benefit Structure		
Actuarial Value for DB Program	$140,291	$145,142
Adjustments per Table 9	7,680	6,048
Board's THBF allocation	0	0
Actuarial Value of Assets	$147,971	$151,190

For purposes of testing the funding sufficiency of the 1990 Benefit Structure, note that we did not reserve the Board's allocation of assets for future THBF costs because it was established subsequent to 1990.

The following table summarizes the Funded Status of the 1990 Benefit Structure as detailed in **Table 10**. The 1990 Benefit Structure has an Actuarial Deficit.

($Millions)	**2010 Valuation**	**2009 Valuation**
Funded Status – 1990 Benefit Structure		
Actuarial Obligation	$159,457	$150,609
Actuarial Value of Assets	147,971	151,190
Unfunded Actuarial Obligation	$ 11,486	$ (581)
Funded Ratio	93%	100%

Supplemental State Contributions: The statute calls for a supplemental State contribution if one of the two conditions described above is met. **Since an Unfunded Actuarial Obligation on the 1990 Benefit Structure exists as of the 2010 Actuarial Valuation, additional funding from the State under this statutory provision is required at this time.**

The funded status of the 1990 Benefit Structure in future years is difficult to predict with certainty because the Actuarial Value of Assets for the 1990 Benefit Structure includes adjustments for contributions and benefits paid in excess of those in place in 1990. The benefits paid may vary considerably depending on demographic experience. In addition, the Actuarial Obligation can only be assessed accurately when current census data is evaluated along with current asset information.

Table 9
Asset Adjustment for 1990 Benefit Structure

($Millions)	2010	2009
Assets Allocated to Post-1990 Benefit Increases		
Allocated Market Value at Beginning of Year	$ 4,551	$ 4,282
Adjustment for prior DBS Program benefit payments	0	445
Contributions During the Year		
EC §22951 at 0.250% of Earned Salaries	(65)	(71)
EC §22955 at 2.017% of second preceding fiscal year Earned Salaries	(564)	(536)
2% DBS redirection reallocated to DB Program	555	597
THBF costs reallocated to DB Program	32	30
Total Adjustment to Contributions[1]	(42)	21
Benefits Paid During the Year		
Post-1990 Benefits Paid During the Year	1,305	1,158
2% DBS redirection reallocated to DB Program	(10)	(22)
Total Adjustment to Benefits Paid	1,295	1,136
Estimated Investment Earnings for the Year [2]	661	(1,333)
Total Allocated Market Value at End of Year	**$ 6,465**	**$ 4,551**
Ratio of Actuarial Value to Market Value [3]	118.794%	132.911%
Actuarial Value of Assets for Post-1990 Benefit Increases	**$ 7,680**	**$ 6,048**

(1) May not add exactly, due to rounding.

(2) Based on Fair Market Value and uniform cash flow for contributions, benefits, and expenses. The rates of return used in these calculations were -25.45% for 2008-09 and 12.94% for 2009-10.

(3) Developed from Table 5.

Table 10
Funding Sufficiency for 1990 Benefit Structure

($Millions)	2010	2009
Actuarial Obligation		
Present Value of Projected Benefits		
Benefits Currently Being Paid	$ 83,075	$ 74,959
Benefits to Inactive Members	5,439	4,957
Benefits to Active Members	118,160	118,952
Total	$206,674	$198,868
Present Value of Future Normal Costs	47,217	48,259
Actuarial Obligation	$159,457	$150,609
Actuarial Value of Assets		
Actuarial Value of Assets *(Table 7)*	$140,291	$145,142
Plus, Asset Adjustment *(Table 9)*	7,680	6,048
Plus, Allocation to Health Benefits	0	0
Net Assets Available	$147,971	$151,190
Funded Status		
Actuarial Obligation	$159,457	$150,609
Actuarial Value of Assets	147,971	151,190
Unfunded Actuarial Obligation (Surplus)	$ 11,486	$ (581)
Funded Ratio	93%	100%
Amortization Period		
Revenue for 1990 Benefits	16.000%	16.000%
Normal Cost Rate for 1990 Benefits	(15.002)	(14.653)
EC 22955(b)	1.206	0.000
Revenue Available for Amortization	2.204%	1.347%
Amortization Period	*Does Not Amortize*[(1)]	*Amortization Not Required*

(1) The available revenue does not pay off the Unfunded Actuarial Obligation over any period. Note that this factors in the expected recognition of losses that are currently deferred.

Table 11
Amortization of 1990 Unfunded Actuarial Obligation
(Deferred Losses are Recognized)[1]

($Millions)		Beginning	Amortization Payment				Interest	Recognition of	Ending
		Unfunded	16%	Supp.	Normal	Available	Charge	Deferred	Unfunded
Year	FYE	Act. Oblig.	Contrib.	Contrib.	Cost	Amtzn.	at 7.75%	Asset Losses	Act. Oblig.
1	2011	$11,486	$4,427	$0	$4,151	$276	$880	$8,756	$20,846
2	2012	20,846	4,604	136	4,317	423	1,599	6,289	28,311
3	2013	28,311	4,788	214	4,489	513	2,175	4,518	34,491
4	2014	34,491	4,979	295	4,669	605	2,650	3,245	39,781
5	2015	39,781	5,179	381	4,856	704	3,056	2,331	44,464
6	2016	44,464	5,386	468	5,050	804	3,415	1,675	48,750
7	2017	48,750	5,601	487	5,252	836	3,746	1,203	52,863
8	2018	52,863	5,825	507	5,462	870	4,064	864	56,921
9	2019	56,921	6,058	527	5,680	905	4,377	621	61,014
10	2020	61,014	6,300	548	5,907	941	4,693	446	65,212
11	2021	65,212	6,552	570	6,144	978	5,017	320	69,571
12	2022	69,571	6,814	593	6,390	1,017	5,353	230	74,137
13	2023	74,137	7,088	616	6,645	1,059	5,705	165	78,948
14	2024	78,948	7,371	641	6,911	1,101	6,076	119	84,042
15	2025	84,042	7,665	667	7,187	1,145	6,470	85	89,452
16	2026	89,452	7,972	693	7,475	1,190	6,887	61	95,210
17	2027	95,210	8,291	721	7,774	1,238	7,332	44	101,348
18	2028	101,348	8,623	750	8,085	1,288	7,805	32	107,897
19	2029	107,897	8,967	780	8,408	1,339	8,311	23	114,892
20	2030	114,892	9,326	811	8,745	1,392	8,851	16	122,367
21	2031	122,367	9,699	844	9,094	1,449	9,428	12	130,358
22	2032	130,358	10,088	877	9,458	1,507	10,045	8	138,904
23	2033	138,904	10,491	912	9,836	1,567	10,705	6	148,048
24	2034	148,048	10,910	949	10,230	1,629	11,412	4	157,835
25	2035	157,835	11,347	987	10,639	1,695	12,168	3	168,311
26	2036	168,311	11,801	1,026	11,065	1,762	12,977	2	179,528
27	2037	179,528	12,273	1,067	11,507	1,833	13,844	2	191,541
28	2038	191,541	12,764	1,110	11,967	1,907	14,772	1	204,407
29	2039	204,407	13,275	1,154	12,446	1,983	15,766	1	218,191
30	2040	218,191	13,805	1,201	12,944	2,062	16,831	1	232,961

(1) There is currently an Unfunded Actuarial Obligation based on the 1990 Benefit Structure, so supplemental State contributions are required.

Section 8
Funding Sufficiency

The contributions to fund the DB Program include those listed below and described in **Table 12,** including reference to the appropriate section of the California Education Code. Since each contribution is not paid uniformly over time as a percentage of Earned Salaries, we have calculated an equivalent rate over a 30-year period, the period used to test the sufficiency of the statutory revenue stream.

Source of Revenue	Current Rate	Equivalent Rate
Members	8.000%	8.000%
Directed to DBS Accounts	(2.000)	(0.054)
Employers	8.000	8.000
Employers	0.250	0.250
State	2.017	1.874
State – 1990 Benefit Structure	0.000	1.206
Equivalent Level Contribution Rate over 30 Years		**19.276%**

Twenty-five percent of the members' contributions are temporarily directed to the Defined Benefit Supplement Program (DBS) through December of 2010. When converted to a level percentage over a 30-year period, this is equal to a reduction in the value of contributions of 0.054% of future salaries.

The State contribution rate will be 2.017% of the second preceding fiscal year Earned Salaries which is equivalent to a lesser percentage of current Earned Salaries. For example, the State contribution for the 2010-11 will be equal to 2.017% of the 2008-09 Earned Salaries. Based on two years of known future contributions and projections for the other years, the equivalent rate for the 30-year period is 1.874% of current Earned Salaries.

As demonstrated in Tables 10 and 11, the supplemental contribution from the State for the 1990 benefit structure is required at this time. The equivalent contribution rate for the supplemental contributions over the 30-year period is 1.206%.

The calculation of the equivalent rates in **Table 13** results in 19.276% of Earned Salaries over a 30-year period.

Table 14 shows the amortization of the Unfunded Actuarial Obligation on a year-by-year basis. Based on the current Actuarial Value of Assets and all future experience emerging as assumed, the Unfunded Actuarial Obligation will not be amortized over the next 30 years. This is consistent with our projections from prior valuations.

Table 15 summarizes these findings. Note that the supplemental contributions under EC §22955(b) are reflected.

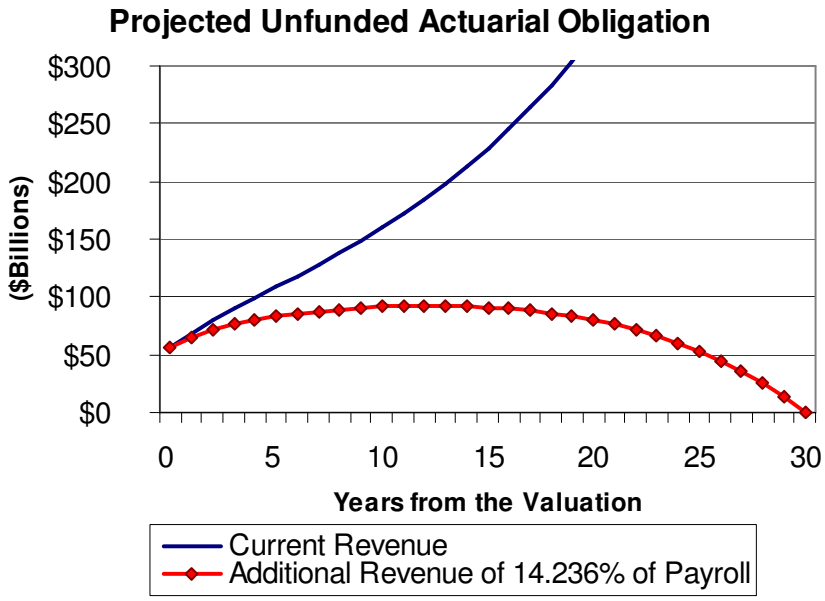
	2010 Valuation	2009 Valuation
Normal Cost Rate	17.713%	17.314%
Amortization Rate	15.799*	14.545*
Total Level Rate over a 30-Year Period	33.512%	31.859%
Projected Revenue	19.276%	17.951%
Estimated Additional Revenue Needed	14.236%*	13.908%*

* *The additional revenue needed reflects the expected future recognition of asset losses currently being deferred in the June 30, 2010 Actuarial Value of Assets.*

It is clear that based on the current data, methods, and assumptions, the projected revenue for the DB Program is not sufficient.

Table 16 (in the same format as Table 14) shows the amortization of the Unfunded Actuarial Obligation over a 30-year period **if contribution revenue were increased by 14.236% of current year Earned Salaries** on the valuation date. We did not address the source of the additional revenue as it is not relevant to the amortization schedule, except as previously noted an increase in the State and member contribution rates would have to be greater than 1.0% of payroll to be equivalent to a 1.0% contribution to pay off the Unfunded Actuarial Obligation.

The following graph illustrates the expected amortization of the Unfunded Actuarial Obligation with and without the additional revenue stream. This is based on a future investment return of 7.75% each year going forward and all other assumptions being met.



One of the future contingencies that may lessen the impact of the funding shortage is the potential growth of the active DB Program membership. An increase in the number of active members will improve the financial condition of the DB Program because the additional revenue should exceed the expected Normal Cost Rate (the Normal Cost Rate is the expected total cost for a new member).

The excess of revenue over the Normal Cost Rate for additional members will provide added resources to finance the current Unfunded Actuarial Obligation. However, as the total current contribution rate is only slightly greater than the Normal Cost Rate, an increasing active population would not be expected to have a significant impact based on the current contribution level.

Conversely, a declining active population, which has been the recent experience of CalSTRS, could have a negative impact on the additional revenue percentage needed.

Table 12
Contributions

		Current Rate	Equivalent Rate [1]
EC 22901	Members	8.000%	8.000%
EC 22901.5	Directed to DBS Accounts [2]	(2.000)	(0.054)
EC 22950 & 22951	Employers	8.250	8.250
EC 22950 (c)	Employers for THBF [3]	*as needed*	0.000
EC 22955 (a)	State [4]	2.017	1.874
EC 22955 (b)	State [5]	*varies by year*	1.206
Equivalent Level Contribution Rate over 30-Year Period			**19.276%**

(1) Equivalent level contribution rate payable over the next 30 years. See Table 13 for details.

(2) 25% of Member Contributions will be directed to Defined Benefit Supplement Accounts through December 31, 2010.

(3) The Teachers' Health Benefit Fund is financed by a redirection of employer contributions. The Teachers' Retirement Board has set aside DB Program assets to finance these future costs. This is reflected in the valuation by adding the unfunded obligation for future THBF benefits to the Actuarial Obligation of the DB Program. See Table 2.

(4) The State's contribution of 2.017% is paid quarterly based on second prior fiscal year salaries.

(5) Additional funding is provided only if the Normal Cost Rate is greater than 16.000% of salaries for benefits in effect on July 1, 1990 or there is an Unfunded Actuarial Obligation (related to the 1990 Benefit Structure). The 1990 Benefit Structure was not adequately funded as of June 30, 2010, so additional contributions are required.

Table 13
30-Year Projection of Contributions

($Millions)			Member	Employer			
	Projected	Member	DBS	*22950 &*	State	State	Total
FYE	Salaries	22901	*22901.5*	*22951*	*22955(a)*	*22955(b)*	Contrib.
2011	$27,666	$2,213	($277)	$2,282	$573	$0	$4,791
2012	28,773	2,302	0	2,374	524	136	5,336
2013	29,924	2,394	0	2,469	558	214	5,635
2014	31,121	2,490	0	2,567	580	295	5,932
2015	32,366	2,589	0	2,670	604	381	6,244
2016	33,660	2,693	0	2,777	628	468	6,566
2017	35,007	2,801	0	2,888	653	487	6,829
2018	36,407	2,913	0	3,004	679	507	7,103
2019	37,863	3,029	0	3,124	706	527	7,386
2020	39,378	3,150	0	3,249	734	548	7,681
2021	40,953	3,276	0	3,379	764	570	7,989
2022	42,591	3,407	0	3,514	794	593	8,308
2023	44,295	3,544	0	3,654	826	616	8,640
2024	46,067	3,685	0	3,801	859	641	8,986
2025	47,909	3,833	0	3,953	893	667	9,346
2026	49,826	3,986	0	4,111	929	693	9,719
2027	51,819	4,146	0	4,275	966	721	10,108
2028	53,892	4,311	0	4,446	1,005	750	10,512
2029	56,047	4,484	0	4,624	1,045	780	10,933
2030	58,289	4,663	0	4,809	1,087	811	11,370
2031	60,621	4,850	0	5,001	1,130	844	11,825
2032	63,045	5,044	0	5,201	1,176	877	12,298
2033	65,567	5,245	0	5,409	1,223	912	12,789
2034	68,190	5,455	0	5,626	1,272	949	13,302
2035	70,918	5,673	0	5,851	1,322	987	13,833
2036	73,754	5,900	0	6,085	1,375	1,026	14,386
2037	76,704	6,136	0	6,328	1,430	1,067	14,961
2038	79,773	6,382	0	6,581	1,488	1,110	15,561
2039	82,964	6,637	0	6,844	1,547	1,154	16,182
2040	86,282	6,903	0	7,118	1,609	1,201	16,831
PV [(1)]	$501,214	$40,097	($267)	$41,350	$9,391	$6,043	$96,614
Level Rate [(2)]		**8.000%**	**(0.054%)**	**8.250%**	**1.874%**	**1.206%**	**19.276%**

(1) Present Value, as of the valuation date, of 30-year series of contributions and appropriations.

(2) Equivalent level rate payable over the 30-year period.

Table 14
Amortization of Unfunded Actuarial Obligation [1] [2]

($Millions)		Beginning	Amortization Payment			Interest	Recognition of	Ending
		Unfunded	Total	Normal	Available	Charge	Deferred	Unfunded
Year	FYE	Act. Oblig.	Contrib.	Cost	Amtzn.	at 7.75%	Asset Losses	Act. Oblig.
1	2011	$56,024	$4,792	$4,901	($109)	$4,346	$8,319	$68,798
2	2012	68,798	5,336	5,097	239	5,323	5,976	79,858
3	2013	79,858	5,635	5,300	335	6,176	4,293	89,992
4	2014	89,992	5,932	5,512	420	6,958	3,084	99,614
5	2015	99,614	6,244	5,733	511	7,701	2,215	109,019
6	2016	109,019	6,566	5,962	604	8,426	1,591	118,432
7	2017	118,432	6,829	6,201	628	9,155	1,143	128,102
8	2018	128,102	7,102	6,449	653	9,903	821	138,173
9	2019	138,173	7,386	6,707	679	10,683	590	148,767
10	2020	148,767	7,681	6,975	706	11,502	424	159,987
11	2021	159,987	7,988	7,254	734	12,371	304	171,928
12	2022	171,928	8,308	7,544	764	13,295	219	184,678
13	2023	184,678	8,640	7,846	794	14,282	157	198,323
14	2024	198,323	8,986	8,160	826	15,338	113	212,948
15	2025	212,948	9,345	8,486	859	16,471	81	228,641
16	2026	228,641	9,719	8,826	893	17,686	58	245,492
17	2027	245,492	10,108	9,179	929	18,990	42	263,595
18	2028	263,595	10,512	9,546	966	20,392	30	283,051
19	2029	283,051	10,933	9,928	1,005	21,898	22	303,966
20	2030	303,966	11,370	10,325	1,045	23,517	15	326,453
21	2031	326,453	11,825	10,738	1,087	25,258	11	350,635
22	2032	350,635	12,298	11,167	1,131	27,131	8	376,643
23	2033	376,643	12,790	11,614	1,176	29,145	6	404,618
24	2034	404,618	13,301	12,078	1,223	31,311	4	434,710
25	2035	434,710	13,833	12,562	1,271	33,641	3	467,083
26	2036	467,083	14,387	13,064	1,323	36,148	2	501,910
27	2037	501,910	14,962	13,587	1,375	38,845	2	539,382
28	2038	539,382	15,561	14,130	1,431	41,747	1	579,699
29	2039	579,699	16,183	14,695	1,488	44,870	1	623,082
30	2040	623,082	16,830	15,283	1,547	48,230	1	669,766

(1) Based on the actuarial value of assets with projected recognition of deferred known asset losses as of June 30, 2010.

(2) Supplemental State contributions under EC §22955(b) are included, as they are required based on the current valuation.

Table 15
Funding Sufficiency

($Millions)	June, 2010	June, 2009
Funded Status ***(Table 7)***		
Actuarial Obligation	$ 196,315	$ 185,683
Actuarial Value of Assets	140,291	145,142
Unfunded Actuarial Obligation	$ 56,024	$ 40,541
Funded Ratio	71%	78%
Level Contributions over 30 Years ***(Table 12)***	19.276%	17.951%
Amortization Period based on Current Revenues		
Total Level Rate over the Amortization Period	19.276%	17.951%
Normal Cost Rate	17.713	17.314
Amortization Rate	1.563%	0.637%
Amortization Period (Based on current revenue projections)	*Does not amortize*	*Does not amortize*
Calculated Contribution Rate for 30-Year Funding Period		
Normal Cost Rate	17.713%	17.314%
Amortization Rate	15.799	14.545
Total Level Rate over the Amortization Period	33.512%	31.859%
Estimated Additional Revenue Needed *(Based on current valuation assumptions)*	14.236%	13.908%

Table 16
Amortization of Unfunded Actuarial Obligation [1]
Including Sufficient Additional Contributions [2] [3]

($Millions)		Beginning	Amortization Payment			Interest	Recognition of	Ending
		Unfunded	Total	Normal	Available	Charge	Deferred	Unfunded
Year	FYE	Act. Oblig.	Contrib.	Cost	Amtzn.	at 7.75%	Asset Losses	Act. Oblig.
1	2011	$56,024	$8,731	$4,901	$3,830	$4,196	$8,319	$64,709
2	2012	64,709	9,432	5,097	4,335	4,850	5,976	71,200
3	2013	71,200	9,895	5,300	4,595	5,343	4,293	76,241
4	2014	76,241	10,362	5,512	4,850	5,724	3,084	80,199
5	2015	80,199	10,852	5,733	5,119	6,021	2,215	83,316
6	2016	83,316	11,358	5,962	5,396	6,252	1,591	85,763
7	2017	85,763	11,812	6,201	5,611	6,433	1,143	87,728
8	2018	87,728	12,285	6,449	5,836	6,577	821	89,290
9	2019	89,290	12,776	6,707	6,069	6,689	590	90,500
10	2020	90,500	13,287	6,975	6,312	6,774	424	91,386
11	2021	91,386	13,818	7,254	6,564	6,833	304	91,959
12	2022	91,959	14,371	7,544	6,827	6,867	219	92,218
13	2023	92,218	14,946	7,846	7,100	6,877	157	92,152
14	2024	92,152	15,544	8,160	7,384	6,861	113	91,742
15	2025	91,742	16,166	8,486	7,680	6,818	81	90,961
16	2026	90,961	16,812	8,826	7,986	6,746	58	89,779
17	2027	89,779	17,485	9,179	8,306	6,642	42	88,157
18	2028	88,157	18,184	9,546	8,638	6,504	30	86,053
19	2029	86,053	18,911	9,928	8,983	6,327	22	83,419
20	2030	83,419	19,668	10,325	9,343	6,110	15	80,201
21	2031	80,201	20,455	10,738	9,717	5,846	11	76,341
22	2032	76,341	21,273	11,167	10,106	5,532	8	71,775
23	2033	71,775	22,124	11,614	10,510	5,163	6	66,434
24	2034	66,434	23,009	12,078	10,931	4,733	4	60,240
25	2035	60,240	23,929	12,562	11,367	4,236	3	53,112
26	2036	53,112	24,886	13,064	11,822	3,667	2	44,959
27	2037	44,959	25,882	13,587	12,295	3,017	2	35,683
28	2038	35,683	26,917	14,130	12,787	2,279	1	25,176
29	2039	25,176	27,994	14,695	13,299	1,445	1	13,323
30	2040	13,323	29,113	15,283	13,831	507	1	0

(1) Based on the actuarial value of assets.

(2) An additional contribution of 14.236% of Earned Salaries is included for each of the 30 years. This schedule is for illustrative purposes only since any legislated increase in contributions would likely be effective after the valuation date.

(3) Supplemental State contributions under EC §22955(b) are included, as they are required based on the current valuation.

Appendix A
Provisions of Governing Law

All of the actuarial calculations contained in this report are based upon our understanding of the CalSTRS DB Program as contained in Part 13 of the California Education Code. The provisions used in this valuation are summarized below for reference purposes.

Member Contributions

Contribution Rate:	8.0% of creditable compensation. The employer can pay all or a portion of a member's contributions. 25% of this contribution is redirected to the member's Defined Benefit Supplement account through December 31, 2010. The redirection of member contributions does not apply to the 1990 Benefit Structure.
Interest Rate:	Interest is credited at the end of each fiscal year based on rates adopted by the Teachers' Retirement Board. Currently, rates are approximately equal to two-year Treasury notes.

Normal Retirement

Eligibility Requirement:	Age 60 with five years of credited service.
Allowance:	Two percent of final compensation for each year of credited service.
Final Compensation:	Average salary earnable for the highest three consecutive years of credited service for one position. For members with 25 years of service, the calculation is based on the highest average compensation earnable in a consecutive 12-month period. 12-month highest average compensation does not apply to the 1990 Benefit Structure.
Credited Service:	For each year of membership, credited service is granted based on the ratio of salary earned to full-time salary earnable for one position.
Sick Leave Service Credit:	Credited service is granted for unused sick leave at the time of retirement. Sick Leave Service Credit up to 0.2 years of Credited Service may be used for eligibility for One-Year Final Compensation or to attain the Career Factor or the Longevity Bonus. Unused sick leave service credit does not apply to the 1990 Benefit Structure.

Career Factor:	If a member has 30 years of credited service, the age factor is increased by 0.2%. However, the maximum age factor is 2.4%. Career factor does not apply to the 1990 Benefit Structure.
Longevity Bonus:	For members attaining 30 years of service by January 1, 2011, a longevity bonus of $200 per month is added to the unmodified allowance. The bonus is increased to $300 per month with 31 years of service, and $400 per month with 32 or more years of service. Longevity bonus does not apply to the 1990 Benefit Structure.
IRC Section 415:	Benefits are subject to limits imposed under Internal Revenue Code (IRC) Section 415. However, no limits are imposed in the valuation of the DB Program in order to address the potential pay-as-you-go funding needs of the Teachers' Replacement Benefits Program Fund.
IRC Section 401(a)(17):	Compensation is limited under IRC Section 401(a)(17) and assumed to increase at the rate of inflation for valuation purposes. Current 401(a)(17) limits do not apply to members hired before July 1, 1993.

Early Retirement

Eligibility Requirement:	Age 55 with five years of credited service, or age 50 with 30 years of credited service.
Benefit Reduction:	A 1/2% reduction in the normal retirement allowance for each full month or partial month the member is younger than age 60, plus a reduction of 1/4% for each full month or partial month the member is younger than age 55.

Late Retirement

Allowance:	Members continue to earn additional service credit after age 60. The 2% age factor increases by 0.033% for each quarter year of age that the member is over age 60, up to a maximum of 2.4%. The late retirement adjustment does not apply to the 1990 Benefit Structure.

Deferred Retirement

Allowance:	Any time after satisfying the minimum service requirement, a member may cease active service, leave the accumulated contributions on deposit, and later retire upon attaining the minimum age requirement.

Post-Retirement Benefit Adjustment

Benefit Improvement:	2% simple increase on September 1 following the first anniversary of the effective date of the allowance, applied to all continuing allowances.

Disability Allowance - Coverage A

Eligibility Requirement:	Member has five years of credited California service and has not attained age 60.
Allowance:	50% of final compensation or 5% of final compensation for each year of service credit if over age 45 with less than 10 years of service credit.
Children's Benefit:	10% for each eligible dependent child, up to a maximum of 40% of final compensation. The increment for each eligible child continues until the child marries or attains age 22.
Offsets:	Allowance, including children's increment, is reduced by disability benefits payable under Social Security, Workers' Compensation and district-paid income protection plan.

Disability Allowance - Coverage B

Eligibility Requirement:	Member has five years of credited California service.
Allowance:	50% of final compensation, regardless of age and service credit.
Children's Benefit:	10% for each eligible child up to four children, for a maximum of 40% of final compensation. The increment for each child continues until the child attains age 21, regardless of student, marital, or employment status.
Offsets:	The member's allowance is reduced by disability benefits payable under Workers' Compensation.

Death Before Retirement - Coverage A

Eligibility Requirement:	One or more years of service credit for active members or members receiving a disability allowance.
Lump Sum Payment:	$6,163 lump sum to the designated beneficiary. If there is no surviving spouse, domestic partner or eligible children, the contributions and interest are paid to the designated beneficiary.

Allowance:	The surviving spouse or domestic partner with eligible children will receive a family benefit of 40% of final compensation for as long as there is at least one eligible child. An additional 10% of final compensation is payable for each eligible child up to a maximum benefit of 90%. If there is no surviving spouse or domestic partner, an allowance of 10% of final compensation is payable to eligible children up to a maximum benefit of 50%. When there are no eligible children, the spouse or domestic partner may elect to receive one half of a 50% joint and survivor allowance projected to age 60, or take a lump sum payment of the remaining contributions and interest.

Death Before Retirement - Coverage B

Eligibility:	One or more years of service credit for active members.
Lump Sum Payment:	$24,652 lump sum to the designated beneficiary. If there is no surviving spouse or domestic partner, the contributions and interest are paid to the designated beneficiary.
Allowance:	A lump sum payment of the contributions and interest. or One-half of a 50% joint and survivor allowance, beginning on the member's 60th birthday, or immediately with a reduction based on the member and spouse's (or domestic partner's) age at the time the benefit begins. If the surviving spouse or domestic partner elects a monthly allowance, each eligible child would receive 10% of the member's final compensation, with a maximum benefit of 50%.

Death After Retirement

Lump Sum Payment:	$6,163 lump sum to the designated beneficiary.
Annuity Form:	If the retiree had elected one of the joint and survivor options, the retirement allowance would be modified in accordance with the option selected. If no option had been elected, payment of the unpaid contributions and interest, if any, remaining in the retiree's account.

Termination from the Program

Refund:	Refund of contributions with interest as credited to the member's account to date of withdrawal. A refund terminates membership and all rights to future benefits from the System.
Re-entry After Refund:	Former members who re-enter the System, may redeposit all amounts previously refunded plus regular interest. The member must earn one year of credited service after re-entry before becoming eligible for System benefits.

Appendix B
Actuarial Methods and Assumptions

This section of the report discloses the actuarial methods and assumptions used in this actuarial valuation. These methods and assumptions have been chosen on the basis of recent experience of the DB Program and on current expectations as to future economic conditions.

The assumptions are intended to estimate the future experience of the members of the DB Program and of the DB Program itself in areas that affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in estimated costs of the DB Program's benefits.

Actuarial Cost Method

The accruing costs of all benefits are measured by the Entry Age Actuarial Cost Method. The projected revenue in excess of the Normal Cost is tested for sufficiency to amortize the Unfunded Actuarial Obligation created by this method. Amortization is calculated on a level percentage of salary including general wage inflation but no increase or decrease in the number of active members.

Method: The actuarial present value of projected benefits for each individual member included in the valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Normal Cost. The Normal Cost is based on the benefit structure available to new entrants on the valuation date. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future Normal Costs is called the Actuarial Obligation. The excess of the Actuarial Obligation over the Actuarial Value of Assets is called the Unfunded Actuarial Obligation. If the Actuarial Value of Assets exceeds the Actuarial Obligation, the difference is called the Actuarial Surplus.

Entry Age: The ages at entry of future active members are assumed to average the same as the entry ages of the present active members they replace. If the number of active members should increase (or decrease), it is further assumed that the average entry age of the larger (or smaller) group will be the same, from an actuarial standpoint, as that of the present active group. Under these assumptions, the Normal Cost Rate will not vary with the termination of the present active membership, or with an expansion or contraction of the active membership.

Asset Valuation Method

The assets are valued using a method that delays recognition of investment gains or losses. The expected actuarial value is the prior year's actuarial value increased with net cash flow of funds, and all increased with interest during the past year at the expected investment return assumption. One-third of the difference between the expected actuarial value of assets and the Fair Market Value of assets is added to the expected actuarial value of assets to arrive at the Actuarial Value of Assets.

The asset smoothing method was adopted for the 1999 Actuarial Valuation and is effective for the investment experience beginning in July of 1993.

Actuarial Assumptions

The Actuarial Standards Board has adopted Actuarial Standard of Practice No. 27, *Selection of Economic Assumptions for Measuring Pension Obligations*. This Standard provides guidance on selecting economic assumptions under defined benefit retirement programs such as the System. In our opinion, the economic assumptions have been developed in accordance with the Standard.

The Actuarial Standards Board has adopted Actuarial Standard of Practice No. 35, *Selection of Demographic and Other Noneconomic Assumptions for Measuring Pension Obligations*. This Standard provides guidance on selecting demographic assumptions under defined benefit retirement programs such as the System. In our opinion, the demographic assumptions have been developed in accordance with the Standard.

The assumptions are intended to estimate the future experience of the members of the DB Program and of the System itself in areas that affect the projected benefit flow and anticipated investment earnings. Any variations in future experience from that expected from these assumptions will result in corresponding changes in estimated costs of the Program's benefits.

The demographic assumptions are listed in **Table B.1** and illustrated at selected ages and duration combinations in **Tables B.2** – **B.7**.

Table B.1
List of Major Valuation Assumptions

I. Economic Assumptions

A.	Investment Return (net of investment and administrative expenses)	7.75%
B.	Interest on Member Accounts	6.00%
C.	Wage Growth	4.00%
D.	Inflation	3.00%

II. Demographic Assumptions

A. Mortality

(1) Active	- Male	2007 CalSTRS Retired – M (-2 years)	Table B.2
	- Female	2007 CalSTRS Retired – F (-2 years)	Table B.2
(2) Retired & Beneficiary *	- Male	2007 CalSTRS Retired – M	Table B.2
	- Female	2007 CalSTRS Retired – F	Table B.2
(3) Disabled *	- Male	RP 2000-M (minimum 2.5% with select rates in first three years)	Table B.2
	- Female	RP 2000-F (minimum 2.0% with select rates in first three years)	Table B.2

* *Future retirees and beneficiaries are valued with a 2-year age setback*

B.	Service Retirement	Experience Tables	Table B.3
C.	Disability Retirement	Experience Tables	Table B.4
D.	Withdrawal	Experience Tables	Table B.5
	Probability of Refund	Experience Tables	Table B.6
E.	Merit Salary Increases	Experience Tables	Table B.7
F.	Supplemental Assumptions		Table B.8

Table B.2
Mortality

	Active Members	
Age	**Male**	**Female**
25	0.032%	0.019%
30	0.037	0.020
35	0.039	0.024
40	0.063	0.039
45	0.096	0.060
50	0.130	0.094
55	0.186	0.143
60	0.292	0.221
65	0.527	0.392

	Retired Members and Beneficiaries *		Disabled Members (After Year 3) *	
Age	**Male**	**Female**	**Male**	**Female**
50	0.151%	0.112%	2.500%	2.000%
55	0.214	0.168	2.500	2.000
60	0.362	0.272	2.500	2.000
65	0.675	0.506	2.500	2.000
70	1.274	0.971	2.728	2.067
75	2.384	1.674	4.691	3.411
80	4.355	3.257	8.049	5.629
85	7.958	6.164	13.604	9.634
90	14.262	11.915	21.661	15.762
95	23.366	18.280	29.985	21.524
	Select rates for disability:			
	First year of disablement		6.0%	3.5%
	Second year of disablement		4.8	3.0
	Third year of disablement		3.5	2.5

* *Future retirees and beneficiaries are valued with a 2-year age setback*

Table B.3
Service Retirement

	Only for the 1990 Benefit Structure		For the DB Program			
			Under 30 Years *		30 or More Years	
Age	Male	Female	Male	Female	Male	Female
50	0.0%	0.0%	0.0%	0.0%	1.5%	2.5%
51	0.0	0.0	0.0	0.0	1.5	2.5
52	0.0	0.0	0.0	0.0	1.5	2.5
53	0.0	0.0	0.0	0.0	2.0	2.5
54	1.5	1.5	0.0	0.0	2.0	3.0
55	5.8	7.0	2.7	4.5	8.0	9.0
56	3.9	4.5	1.8	3.2	8.0	9.0
57	4.9	4.5	1.8	3.2	10.0	11.0
58	6.8	7.0	2.7	4.1	14.0	16.0
59	17.5	14.0	4.5	5.4	18.0	19.0
60	25.0	22.0	6.3	9.0	27.0	31.0
61	16.5	15.0	6.3	9.0	43.0	40.0
62	16.5	15.0	10.8	10.8	38.0	37.0
63	15.0	15.0	11.7	16.2	30.0	35.0
64	17.5	18.0	10.8	13.5	30.0	32.0
65	20.0	18.0	13.5	14.4	30.0	32.0
66	16.0	18.0	10.8	13.5	30.0	32.0
67	16.0	18.0	10.8	13.5	30.0	32.0
68	16.0	16.0	10.8	13.5	30.0	32.0
69	16.0	16.0	10.8	13.5	30.0	32.0
70	100.0	100.0	100.0	100.0	100.0	100.0

** If service is equal to or greater than 25 but less than 28 years, the assumed retirement rates shown above for members with less than 30 years of service are increased by 50%. For members with 28 but less than 30 years, the assumed retirement rates shown above for members with less than 30 years of service are increased by 11%.*

The assumptions shown above are for retirement from active status. We assume that all vested terminated members retire at age 60.

Table B.4
Disability Retirement

Coverage A

Age	Male	Female
25	0.021%	0.021%
30	0.030	0.030
35	0.051	0.060
40	0.081	0.090
45	0.111	0.110
50	0.159	0.220
55	0.210	0.280

Coverage B

	Entry Ages - Male		Entry Ages - Female	
Age	Under 40	40 and Up	Under 40	40 and Up
25	0.012%		0.021%	
30	0.018		0.021	
35	0.036		0.042	
40	0.090		0.078	
45	0.123	0.118%	0.126	0.139%
50	0.171	0.202	0.219	0.252
55	0.252	0.312	0.318	0.367
60	0.204	0.477	0.243	0.529
65	0.144	0.853	0.168	0.916

Table B.5
Withdrawal

	Entry Ages - Male					
Year	**Under 25**	**25 - 29**	**30 - 34**	**35 - 39**	**40 - 44**	**45 & Up**
0	15.3%	15.3%	15.3%	15.3%	15.3%	18.0%
1	13.0	12.5	13.0	13.0	13.0	14.0
2	9.0	7.7	9.0	9.0	9.0	10.0
3	6.0	6.0	6.5	6.5	6.5	7.0
4	4.4	4.8	5.0	5.0	5.0	4.0
5	3.9	3.6	3.0	3.0	3.0	3.0
10	2.0	2.0	2.0	2.0	2.0	
15	1.1	1.1	1.1	1.1		
20	0.6	0.6	0.6			
25	0.4	0.5				
30	0.3					

	Entry Ages - Female					
Year	**Under 25**	**25 - 29**	**30 - 34**	**35 - 39**	**40 - 44**	**45 & Up**
0	15.3%	15.3%	15.3%	15.3%	15.3%	15.3%
1	10.0	11.0	11.0	11.0	10.5	10.5
2	7.2	8.5	8.5	7.5	7.0	7.0
3	6.3	7.0	6.5	6.0	5.5	5.5
4	5.8	6.0	5.5	4.5	4.0	3.0
5	5.5	5.3	4.5	3.8	3.3	2.5
10	2.3	1.8	1.6	1.3	1.3	
15	1.0	0.9	0.9	0.9		
20	0.5	0.5	0.5			
25	0.3	0.4				
30	0.3					

Table B.6
Probability of Refund

	Entry Ages - Male				
Year	**Under 25**	**25 - 29**	**30 - 34**	**35 - 39**	**40 and Up**
Under 5	100%	100%	100%	100%	100%
10	46	46	38	36	36
15	38	38	31	21	
20	28	31	15		
25	15	15			
30	10				

	Entry Ages - Female				
Year	**Under 25**	**25 - 29**	**30 - 34**	**35 - 39**	**40 and Up**
Under 5	100%	100%	100%	100%	100%
10	34	32	32	29	29
15	27	24	24	24	
20	19	14	14		
25	10	10			
30	10				

Table B.7
Merit Salary Increases

	Entry Age - Annual Increase in Salaries Due to Merit					
Yr.	**Under 25**	**25 - 29**	**30 - 34**	**35 - 39**	**40 - 44**	**45 & up**
1	5.6%	5.3%	5.1%	4.8%	4.8%	3.5%
2	5.6	5.1	4.9	4.7	4.7	3.3
3	5.6	5.0	4.8	4.6	4.6	3.0
4	5.5	4.8	4.6	4.4	4.4	2.9
5	5.5	4.8	4.5	3.8	3.8	2.6
10	3.2	3.0	2.7	2.3	2.2	1.6
15	1.5	1.5	1.4	1.1	1.1	0.8
20	1.3	1.1	1.1	0.8	0.8	0.6
25	1.1	0.9	0.8	0.5	0.5	
30	0.9	0.7	0.6	0.5		
35	0.8	0.7	0.6			
40	0.8	0.6				
45	0.8					

Table B.8
Supplemental Assumptions

Unused Sick Leave: Credited Service is increased by 2.1%.

Optional Forms: Active & Inactive: Based on single life annuity assumed.
Retirees and Beneficiaries: Based on optional form in data.

Probability of Marriage:

Male:	90%
Female:	70%

Male spouses are assumed to be three years older than female spouses.

Number of Children: Married members are assumed to have the following number of children:

Member's Gender	Assumed No. of Children
Male	0.75
Female	0.50

Assumed Offsets: The following offsets, expressed as a percentage of Final Compensation, are assumed to cease at age 60:

	Coverage A		Coverage B	
	Male	Female	Male	Female
Death	8.0%	4.0%	0.0%	0.0%
Disability	2.5%	4.0%	2.2%	3.0%

Valuation of Inactive Members

Reliable salary and benefit information is not available for inactive members. Therefore, the Actuarial Obligation for inactive members is valued using individual contribution account balances as follows:

1) Projected Account balances at assumed retirement age of 60 are multiplied by 310%. Note this factor is based on a study of the relationship between individual accumulated contribution balances for inactive members and the Actuarial Obligation at actual retirement.

2) An additional load of 10% is applied to account for the potential redeposit of member contributions.

3) A reduction of 17% is applied to non-vested inactives.

Appendix C
Valuation Data

The membership data for this actuarial valuation was supplied by CalSTRS. Although we did not audit this data, we compared the data for this and the prior valuation and tested for reasonableness, as well as for consistency with prior periodic reports from the CalSTRS staff. Based on these tests, we believe the data to be sufficiently accurate for the purposes of this valuation. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

Tables C.1-C.6 summarize the census data used in this valuation.

Table C.1
Summary of Statistical Information

	June 30, 2010	June 30, 2009
Number of Members		
Active Members [1]	441,544	459,009
Inactive Members [1]	166,976	156,207
Retirees and Beneficiaries		
Service Retirees	213,952	203,649
Disabled Retirees	8,581	8,380
Survivors	21,263	20,588
Total Benefit Recipients	243,796	232,617
Total Membership in Valuation	852,316	847,833
Active Member Statistics		
Earned Salaries	$ 26,275 million	$ 27,327 million
Average Salary	$ 59,507	$ 59,536
Average Age	45.1 years	44.8 years
Average Service	11.3 years	11.0 years

(1) Some active members were reported with no Earnable Salaries, in which case their liabilities, if any, were included with inactive members

Retired Member Statistics[2]	June 30, 2010	June 30, 2009
Average Age		
Service Retiree	72.2	72.2
Disabled Retiree	64.5	64.2
Survivors	76.4	76.2
All Benefit Recipients	72.2	72.2
Average Monthly Benefit		
Service Retirees	$ 3,302	$ 3,164
Disabled Retirees	2,295	2,222
Survivors	1,931	1,859
All Benefit Recipients	$ 3,167	$ 3,034

(2) Average retiree ages shown here are current ages; average retiree ages shown elsewhere in this Appendix are age at retirement.

Inactive Member Statistics	June 30, 2010	June 30, 2009
Average Age	46.7	46.5
Average Account Balance	$ 12,334	$ 12,717

Table C.2
Age and Service Distribution – Active Male Members

	Service					
Age	**Under 1**	**1 – 5**	**6 – 10**	**11 - 15**	**16 - 20**	**21 - 25**
Under 25	301	405	1			
25 to 30	1,159	6,272	321			
30 to 35	723	7,373	5,654	334	1	
35 to 40	538	4,742	6,890	6,134	143	
40 to 45	479	3,507	4,488	7,030	3,098	86
45 to 50	464	2,673	3,087	4,038	3,627	2,207
50 to 55	354	2,533	2,519	3,092	2,648	3,196
55 to 60	351	2,280	2,352	2,564	2,148	2,657
60 to 65	257	1,819	1,808	1,891	1,521	1,488
65 to 70	93	840	622	555	402	379
70 & Up	51	477	276	173	121	114
Unknown	1					
Total	4,771	32,921	28,018	25,811	13,709	10,127

	Service					
Age	**26 - 30**	**31 - 35**	**36 - 40**	**41 - 45**	**Over 45**	**Total**
Under 25						707
25 to 30						7,752
30 to 35						14,085
35 to 40						18,447
40 to 45	1					18,689
45 to 50	71					16,167
50 to 55	1,774	119				16,235
55 to 60	2,320	2,593	182			17,447
60 to 65	1,168	1,361	1,021	27		12,361
65 to 70	224	188	180	73	3	3,559
70 & Up	51	48	54	41	24	1,430
Unknown						1
Total	5,609	4,309	1,437	141	27	126,880

Table C.3
Age and Service Distribution – Active Female Members

	Service					
Age	**Under 1**	**1 – 5**	**6 - 10**	**11 - 15**	**16 - 20**	**21 - 25**
Under 25	1,321	1,669	6			
25 to 30	3,091	23,436	1,678			
30 to 35	1,449	19,366	20,337	1,355		
35 to 40	1,101	10,495	17,010	15,396	425	1
40 to 45	1,100	8,616	10,381	14,099	6,889	360
45 to 50	908	7,284	7,862	8,904	7,293	5,740
50 to 55	783	6,292	7,164	8,444	6,359	6,711
55 to 60	531	4,657	5,914	7,959	6,688	6,643
60 to 65	297	2,647	3,278	4,604	4,163	4,455
65 to 70	114	951	887	1,136	895	929
70 & Up	46	410	308	251	185	197
Unknown		1	3			
Total	10,741	85,824	74,828	62,148	32,897	25,036

	Service					
Age	**26 - 30**	**31 - 35**	**36 - 40**	**41 - 45**	**Over 45**	**Total**
Under 25						2,996
25 to 30						28,205
30 to 35						42,507
35 to 40	1					44,429
40 to 45						41,445
45 to 50	230					38,221
50 to 55	4,223	323				40,299
55 to 60	5,268	4,767	335			42,762
60 to 65	2,776	2,288	1,379	55		25,942
65 to 70	544	316	176	132	7	6,087
70 & Up	128	108	57	44	33	1,767
Unknown						4
Total	13,170	7,802	1,947	231	40	314,664

Table C.4
Age and Service Distribution – All Active Members

	Service					
Age	**Under 1**	**1 - 5**	**6 – 10**	**11 - 15**	**16 - 20**	**21 - 25**
Under 25	1,622	2,074	7			
25 to 30	4,250	29,708	1,999			
30 to 35	2,172	26,739	25,991	1,689	1	
35 to 40	1,639	15,237	23,900	21,530	568	1
40 to 45	1,579	12,123	14,869	21,129	9,987	446
45 to 50	1,372	9,957	10,949	12,942	10,920	7,947
50 to 55	1,137	8,825	9,683	11,536	9,007	9,907
55 to 60	882	6,937	8,266	10,523	8,836	9,300
60 to 65	554	4,466	5,086	6,495	5,684	5,943
65 to 70	207	1,791	1,509	1,691	1,297	1,308
70 & Up	97	887	584	424	306	311
Unknown	1	1	3			
Total	15,512	118,745	102,846	87,959	46,606	35,163

	Service					
Age	**26 - 30**	**31 - 35**	**36 - 40**	**41 - 45**	**Over 45**	**Total**
Under 25						3,703
25 to 30						35,957
30 to 35						56,592
35 to 40	1					62,876
40 to 45	1					60,134
45 to 50	301					54,388
50 to 55	5,997	442				56,534
55 to 60	7,588	7,360	517			60,209
60 to 65	3,944	3,649	2,400	82		38,303
65 to 70	768	504	356	205	10	9,646
70 & Up	179	156	111	85	57	3,197
Unknown						5
Total	18,779	12,111	3,384	372	67	441,544

Table C.5
Inactive Members

Fiscal Year Ending June 30	Number Vested	Total Number	Male % of Total	Female % of Total
2000	16,211	75,580	27.8%	72.2%
2001	18,469	87,146	28.1	71.9
2002	19,703	96,159	28.0	72.0
2003	20,627	104,617	28.3	71.7
2004	22,511	116,128	28.7	71.3
2005	24,113	124,394	28.8	71.2
2006	26,733	133,601	28.8	71.2
2007	28,922	141,450	28.9	71.1
2008	30,370	147,997	29.0	71.0
2009	31,661	156,207	29.0	71.0
2010	33,036	166,976	29.2	70.8

Fiscal Year Ending June 30	Average Account on Deposit	Average Age	Average Service Credit	Average Years Inactive
2000	$ 12,325	46.8	3.2	7.8
2001	12,889	50.7	3.2	8.2
2002	12,997	46.0	3.1	7.3
2003	12,691	46.0	3.0	7.4
2004	12,418	45.8	2.9	7.3
2005	12,177	45.9	2.9	7.4
2006	12,282	45.9	2.9	7.5
2007	12,440	46.0	3.0	7.7
2008	12,698	46.3	2.9	8.0
2009	12,717	46.5	2.9	8.2
2010	12,334	46.7	2.8	8.3

Table C.6
Members Retired for Service

Fiscal Year Ending June 30	Total	Male % of Total	Female % of Total
2000	145,415	38.1%	61.9%
2001	149,727	38.0	62.0
2002	154,884	37.8	62.2
2003	159,172	37.6	62.4
2004	169,022	37.2	62.8
2005	176,008	36.9	63.1
2006	181,833	36.5	63.5
2007	188,659	36.1	63.9
2008	195,960	35.7	64.3
2009	203,649	35.3	64.7
2010	213,952	34.9	65.1

Fiscal Year Ending June 30	Average Age at Retirement	Average Years of Service Credit	Final Average Compensation	Average Current Allowance Payable
2000	60.7	25.0	$ 3,175	$ 1,824
2001	60.7	25.4	3,356	2,033
2002	60.7	25.7	3,539	2,183
2003	60.7	25.9	3,735	2,339
2004	60.7	26.0	3,931	2,488
2005	60.8	26.1	4,103	2,617
2006	60.8	26.2	4,264	2,741
2007	60.8	26.3	4,437	2,878
2008	60.8	26.3	4,620	3,021
2009	60.8	26.4	4,798	3,164
2010	60.9	26.3	4,983	3,302

Appendix D
Glossary

The following definitions are largely excerpts from a list adopted by the major actuarial organizations in the United States. In some cases, the definitions have been modified for specific applicability to the CalSTRS DB Program. Defined terms are capitalized throughout this Appendix.

Actuarial Assumptions: Assumptions as to the occurrence of future events affecting pension costs, such as mortality, withdrawal, disablement, and retirement, changes in compensation, rates of investment earnings and asset appreciation or depreciation, and procedures used to determine other relevant items.

Actuarial Cost Method: A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Obligation.

Actuarial Equivalent: Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

Actuarial Gain or Loss: A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two actuarial valuation dates, as determined in accordance with a particular Actuarial Cost Method.

Actuarial Obligation: That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

Actuarial Present Value: The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.

Actuarial Surplus: The excess, if any, of the Actuarial Value of Assets over the Actuarial Obligation.

Actuarial Valuation:	The determination, as of a Valuation Date, of the Normal Cost, Actuarial Obligation, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.
Actuarial Value of Assets:	The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an actuarial valuation.
Entry Age Cost Method:	An Actuarial Cost Method under which the Actuarial Present Value of Projected Benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a Valuation Date by the Actuarial Present Value of future Normal Costs is called the Actuarial Obligation.
Normal Cost:	The portion of the Actuarial Present Value of Projected Benefits which is allocated to a valuation year by the Actuarial Cost Method.
Unfunded Actuarial Obligation:	The excess, if any, of the Actuarial Obligation over the Actuarial Value of Assets.
Valuation Date:	June 30, 2010.